1.14 Plant Tissues, Transport and Transpiration: 10-minute Pack

AQA 8464 · Calculator allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 The upper epidermis of a leaf is covered by a waxy cuticle. State two functions of the waxy cuticle.

(Total for Question 1 is 2 marks)

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2 The list below gives descriptions of five plant structures.

Descriptions:
1. A dead, hollow, lignified cell that transports water and mineral ions.
2. A living, elongated cell that transports dissolved sugars and amino acids around the plant.
3. A tightly packed cell containing many chloroplasts, found near the upper surface of a leaf.
4. A small pore, usually in the lower epidermis of a leaf, that allows gases to diffuse in and out.
5. A specialised cell that changes shape to open and close a pore in the leaf surface.

For each term below, write the number (1-5) of the description that matches it.

(a) Xylem cell **(1)**

(b) Phloem cell **(1)**

(c) Palisade mesophyll cell **(1)**

(d) Stoma **(1)**

(e) Guard cell **(1)**

(Total for Question 2 is 5 marks)

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3 Xylem and phloem both transport substances around a plant, but in different ways. Compare the direction of transport in xylem and phloem.

(Total for Question 3 is 2 marks)

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Mark scheme · 1.14 Plant Tissues, Transport and Transpiration: 10-minute Pack

Question 1

it acts as a waterproof layer, reducing water loss by evaporation directly through the epidermis, oe **B1**

it is transparent, allowing light to pass through to the palisade mesophyll for photosynthesis, oe **B1**

Answer: The waxy cuticle reduces water loss by evaporation (it is waterproof), and it is transparent so light can pass through to the palisade mesophyll.

Question 2

(a) 1 **B1**

(a) Answer: 1

(b) 2 **B1**

(b) Answer: 2

(c) 3 **B1**

(c) Answer: 3

(d) 4 **B1**

(d) Answer: 4

(e) 5 **B1**

(e) Answer: 5

Question 3

xylem transports substances (water and mineral ions) in one direction only, from roots to leaves, oe **B1**

phloem transports substances (sugars and amino acids) in either direction, from sources to sinks, oe **B1**

Answer: Xylem transport is one-way, from roots to leaves, whereas phloem transport can go in either direction, from a source to a sink.

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